

are not exclusive; for there are many things in their methods which we might with advantage copy; and we could perhaps boycott trade conducted according to plans which we consider dishonourable or underhand. Time alone will show. But this is a fitting opportunity to consider our position; and by organisation, by co-operation among our manufacturers rather than by competition between them, and by education in science of our directors and employees, we might do much to forestall the attack which will undoubtedly again be made on our commercial position, if, at the end of the war, any prospect of recuperation is left to Germany.

WILLIAM RAMSAY.

SCIENCE THE HANDMAID OF ART.

The Pigments and Mediums of the Old Masters.

By Prof. A. P. Laurie. Pp. xiv + 192 + xxxiv plates. (London: Macmillan and Co., Ltd., 1913.) Price 8s. 6d. net.

THE information given in this book shows that the scientific man has come to the aid of the art expert in his endeavour to determine the period and the authorship of paintings of disputed origin. The author's previous works on "Greek and Roman Methods of Painting" and on "Materials of the Painter's Craft" indicate in what degree historical and literary research coupled with technical knowledge can be relied upon as guides in such an inquiry.

The present volume shows to what extent exact experimental investigation can be utilised to assist in this matter. The methods available are based upon an examination of the physical and chemical properties of the pigments and mediums used, and a microscopical examination of the nature of the brush work of the picture. The latter has given very interesting results, and shows that great individuality is found in the work of different artists.

The method recommended by the author for a critical examination of the brush work is to make a photomicrographic reproduction of a selected portion of the picture under a magnification of about three diameters.

The author is gradually accumulating a series of such photomicrographs, of well-authenticated pictures, and these will certainly be a valuable aid in the detection of forgeries, copies, etc. Some striking plates are shown in the book illustrating the use of such brush work enlargements, and the value of the method is well seen by a comparison of plates vi. and vii.—the former from a picture by J. A. Watteau and the latter from a copy by a good modern artist.

In addition to their use for the purpose of

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identification, it appears probable that such photomicrographs might be of much value for instructional purposes, as indicating the methods adopted by noted artists in developing their effects.

The first ten chapters of the book deal with the examination of the pigments and mediums. The physical character of the pigments, such as coarseness of particles, simple or mixed character, etc., may be frequently determined *in situ* under a magnification of about 100 diameters; but the removal of a minute fragment of pigment for more detailed examination is usually desirable. This may be done by making use of a microscopic gouge about a millimetre in diameter, or a complete section through the picture may be obtained by using a hypodermic needle. Full instructions are given for the transference and examination of the fragments of pigment, all tests, of course, being applied under the microscope.

The identification of the pigments and medium used in well authenticated pictures, coupled with historical information regarding the nature of the pigments in use at certain periods, makes it possible approximately to date many pictures, and the knowledge of the particular palette used by an artist, together with an examination of his brushwork, greatly facilitates a judgment in cases of doubtful authenticity.

The book is thus of much interest, not only to dealer and collector, but to the artist and historian. It is obvious, however, that the new methods of examination should be applied to valuable works of art only by such special experts as Prof. Laurie, and there is some slight danger involved in the publication of methods of sampling "old masters," even when the sample is to be taken with a hypodermic needle.

WALTER M. GARDNER.

PUBLIC HEALTH.

- (1) *Preliminary Report on the Treatment of Pulmonary Tuberculosis with Tuberculin.* By Dr. Noel D. Bardswell. With a Prefatory Note by Prof. Karl Pearson. Pp. xxi + 141. (London: H. K. Lewis, 1914.) Price 6s. net.
- (2) *Cambridge Public Health Series. Isolation Hospitals.* By Dr. H. Franklin Parsons. Pp. xiv + 275. (Cambridge: University Press, 1914.) Price 12s. 6d. net.
- (3) *The Bacteriological Examination of Food and Water.* By Dr. William G. Savage. Pp. x + 173. (Cambridge: University Press, 1914.) Price 7s. 6d. net.

(1) TREATMENT of tuberculosis, and in particular pulmonary tuberculosis (phthisis or consumption), with tuberculin is undoubtedly tending to increase in England, and a number of